

IDENTIFICATION

PRODUCT CODE: MAINDEC-8E-D0FC-D
PRODUCT NAME: RANDOM ISZ TEST
DATE CREATED: JUNE 11, 1971
MAINTAINER: DIAGNOSTIC GROUP
AUTHOR: BRUCE HANSEN

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1. ABSTRACT

THIS PROGRAM IS WRITTEN TO TEST THE ISZ INSTRUCTION OF THE PDP-8E. AN ISZ INSTRUCTION IS PLACED IN A FROM LOCATION, AND A TO LOCATION CONTAINS THE OPERAND. PART 1 OF THE PROGRAM SELECTS FROM, TO, AND OPERAND FROM A RANDOM NUMBER GENERATOR, WITH THE OPTION OF HOLDING ANY OR ALL CONSTANT. PART 2 USES A FIXED SET OF FROM, TO, AND OPERAND NUMBERS.

2. REQUIREMENTS

2.1 EQUIPMENT

ONE PDP-8E EQUIPPED WITH TELETYPE.

2.2 STORAGE

THIS PROGRAM USES LOCATIONS 0000-7600(8). THE BINARY LOADER MUST BE STORED IN THE LAST MEMORY PAGE.

2.3 PRELIMINARY PROGRAM

MAINDEC-8E-D0A(N), AND MAINDEC-8E-D0B(N) MUST HAVE RUN SUCCESSFULLY.

3. LOADING PROCEDURE

THE STANDARD BINARY LOADER IS USED.

4. STARTING PROCEDURE

4.1 SWITCH SETTINGS

SR0(0) = HALT ON ERROR
SR1(1) = ELIMINATE ERROR PRINTOUTS
SR3 = FIXED FROMS (1)
RANDOM FROMS (0)
SR4 = FIXED TOS (1)
RANDOM TOS (0)
SR5 = FIXED OPERAND (1)
RANDOM OPERAND (0)
SR9(0) = DO ONE ISZ ONLY
SR11(1) = DO TEST PART 2 SR3, 4, 5, MUST BE 0'S
SR11(0) = DO TEST PART 1

4.2 STARTING ADDRESS

200

4.3 OPERATOR ACTION

- A. SET SR (SWITCH REGISTER) TO 0200 AND PRESS LOAD ADDRESS.
- B. SET SR TO DESIRED MODE OF OPERATION; FOR MOST RUNS, SR9=0
ALLOWS THE MOST TESTING IN THE LEAST AMOUNT OF TIME.

FOR FIXED FROM, TO, OR OPERAND USAGE, THE FIXED NUMBER MAY
BE SELECTED AND ENTERED INTO THE MEMORY LOCATIONS SHOWN
BELOW:

FROM	=0002
TO	=0021
OPERAND	=0022

- C. PRESS, CLEAR AND THEN CONTINUE.

5. OPERATING PROCEDURE

SAME AS PARAGRAPH 4.

6. ERRORS

6.1 ERROR HALTS AND DESCRIPTION

C(PC)	CAUSE
0002	PERIPHERAL INTERRUPT
0254	HALT ON ERROR, SR0=0

6.2 ERROR PRINTOUTS

F	XXXX	T	YYYY			
0	ZZZZ	F	MMMM	R	NNNN	NS

6.2.1 PRINTOUT EXPLANATION

(FROM)	F XXXX	-THE ISZ INSTRUCTION IN LOCATION XXXX FAILED.
(TO)	T YYYY.	-THE OPERAND ADDRESS OF THE ISZ INSTRU- TION WAS YYYY.
(OPERAND)	0 ZZZZ	-THE STARTING COUNT IN THE ISZ LOOP WAS ZZZZ.
(FAILED)	F MMMM	-THE FAILURE OCCURRED TRYING TO ISZ THE NUMBER MMMM.
(RESULT)	R NNNN	-THE RESULT OF THIS ISZ WAS NNNN.
	NS	-NO SKIP OCCURRED
	S,	-INDICATES A SKIP.

6.2.2 EXAMPLES

A. THE FOLLOWING IS A TYPICAL ERROR PRINTOUT.

```
F 3003 T 5470
0 3705 F 4777 R 5000 S
```

LINE 1 OF THE PRINTOUT IS A STATEMENT OF THE PROBLEM. IT SAYS THAT LOCATED AT 3003 IS AN ISZ INSTRUCTION INCREMENTING AN OPERAND STORED IN LOCATION 5470. LINE 2 OF THE PRINTOUT GIVES INFORMATION FOR ERROR ANALYSIS. 3705 WAS THE INITIAL OPERAND, 4777 WAS THE OPERAND BEING INCREMENTED WHEN THE ERROR OCCURRED, AND 5000 IS THE OPERAND FOLLOWING THE FAILING INCREMENT. THE S INDICATES THAT THE INCREMENT RESULTED IN A SKIP. THE ERROR HERE IS OBVIOUSLY THAT THE SKIP SHOULD NOT HAVE OCCURRED.

B. THE FOLLOWING IS ANOTHER TYPICAL ERROR PRINTOUT.

```
F 3003 T 5470
0 3705 F 4777 R 5020 NS
```

THIS IS IDENTICAL TO EXAMPLE (A) EXCEPT THAT A DIFFERENT TYPE OF ERROR HAS OCCURRED. THE RESULT OF INCREMENTING 4777 SHOULD BE 5000, NOT 5020.

6.3 ERROR RECOVERY

THE PROGRAM CONTINUES ON, FOLLOWING AN ERROR PRINTOUT UNLESS $SR0=0$. AFTER A HALT ON ERROR, PUSH CONTINUE TO RESUME TESTING. WHEN ERRORS EXIST, A FAILING CONDITION CHOSEN FROM THOSE TYPED OUT MUST BE USED WITH THE SCOPE MODE. FOR THE SCOPE MODE, PERFORM THE FOLLOWING STEPS:

- A. STOP THE PROGRAM,
- B. INSERT CHOSEN FROM INTO LOCATION 0002.
- C. INSERT CHOSEN TO INTO LOCATION 0021.
- D. INSERT CHOSEN FAILING OPERAND INTO LOCATION 0022
- E. RESTART PROGRAM WITH CONTROL SWITCHES 1,3,4,5, SET TO 1 AND 9 SET TO A 0.

NOTE! BY SETTING $SR0$ TO A 0, THE PROGRAM HALTS FOLLOWING THE ERROR PRINTOUT. THE OPERATOR MAY AT THIS TIME SET SWITCHES 1, 3, 4, 5, TO A 1 AND 9 TO A 0 AND PUSH CONTINUE. THE PROGRAM ENTERS A SCOPE MODE USING THE FAILING CONDITIONS JUST PRINTED.

7. RESTRICTIONS

7.1 STARTING RESTRICTIONS

NONE.

7.2 OPERATING RESTRICTIONS

THE INTERRUPT IS ENABLED DURING PROGRAM OPERATION. ANY ATTACHED
DEVICE WHICH MIGHT CAUSE SPURIOUS INTERRUPTS, MUST BE DISABLED.

8. MISCELLANEOUS

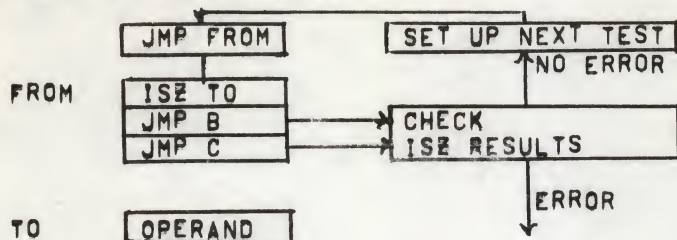
8.1 EXECUTION TIME

SR9 = 1. 11,000 ISZ OPERATIONS/SECOND.
SR9 = 0. 3,500 ISZ OPERATIONS/SECOND.

9.

PROGRAM DESCRIPTION

THE TEST LOOP IS SHOWN BELOW:



PART 1 OF THE PROGRAM USES A RANDOM NUMBER GENERATOR TO SELECT THE FROM, TO, AND OPERAND NUMBERS. ONCE SELECTED, THE OPERAND IS INCREMENTED UNTIL IT REACHES ZERO. EACH ISZ IS CHECKED BY DUPLICATING ISZ WITH TAD, IAC, DCA. EACH ITERATION IS ALSO CHECKED FOR THE PROPER SKIP OR NO-SKIP CONDITION,

PART 2 OF THE PROGRAM IS ACTUALLY PART 1, WITH THE RANDOM NUMBER GENERATED REPLACED BY A FIXED NUMBER GENERATOR. SEQUENCING OF EVENTS IS AS FOLLOWS:

(NOTE: 621(8)<MEMORY TEST AREA<7600(8)):

- A. FROM = 621 TO = 624 TEST A SET OF 24 SELECTED OPERANDS. TO SAVE TIME IT IS SUGGESTED THAT SR9 = 0, SO THAT THE ISZ IS PERFORMED ON EACH OPERAND ONLY ONCE INSTEAD OF INCREMENTING IT UNTIL THE ISZ INSTRUCTION SKIPS.
- B. FROM = 621 TO = 625 REPEAT THE SET OF OPERANDS USED IN (A) ABOVE.

THIS SEQUENCE CONTINUES UNTIL TO REACHES THE UPPER LIMIT OF THE MEMORY TEST AREA. FROM IS THEN INCREMENTED BY 1 AND THE PROCESS IS REPEATED. WHEN FROM REACHES THE UPPER LIMIT OF THE MEMORY TEST AREA, THE TEST IS COMPLETE.

IDEALLY, IT IS DESIRABLE TO ISZ EVERY LOCATION FROM EVERY OTHER LOCATION IN THE TEST AREA AND, IN DOING SO, USE ALL 24 OF THE SELECTED WORST CASE OPERANDS FOR EACH SET OF ADDRESSES. THIS IS WHAT PART 2 DOES, BUT IT TAKES MANY DAYS TO COMPLETE THE TEST. IT IS FOR THIS REASON THAT THE PROGRAM USES THE RANDOM NUMBER GENERATOR SYSTEM OF PART 1. PART 2 IS AN ADDITIONAL FEATURE OF THE PROGRAM WITH VERY LIMITED USE.

A FC IS PRINTED AFTER EACH GROUP OF 32,000 TESTS.

/PDP-8E ISE TEST
 /COPYRIGHT 1970, DIGITAL EQUIPMENT CORP., MAYNARD, MASS. 01754
 /
 /CONSTANTS AND VARIABLES
 *0

0000	0000			
0001	5001	JMP 1	/PERIPHERAL INTERRUPT	
0002	0002	FRMLC, 2	/ISE TEST INSTRUCTION LOCATION	
0003	0003	LIMLO, 3	/LOW LIMIT TEST AREA	
0004	0000	0		
0005	0000	0		
0006	0202	LIMHI, =7576	/HIGH LIMIT TEST AREA	
0007	0547	ASUC, SUC		
0010	0007	MSK7, 0007	/OCTAL CONVERSION MASK	
0011	0000	WORK, 0	/IR0	
0012	0000	WORK1, 0	/IR1	
0013	7401	M377, =377		
0014	3607	NUM, 3607	/THE RANDOM NUMBER LOCATION	
0015	0003	THREE, 3		
0016	2421	ISE1, ISE I TOLOC	/MOVING ISE	
0017	5116	JMP1, JMP BACK	/TEST INSTRUCTION	
0020	5141	JMP2, JMP BAKBRN	/GROUP	
0021	0000	TOLOC, 0	/LOCATION TO BE ISE'D	
0022	0000	PATRN, 0	/STARTING ISE PATTERN	
0023	0000	BEFOR, 0	/FAILING PATTERN BEFORE FAILING ISE	
0024	0000	AFTER, 0	/PREDICTED RESULTS OF EACH ISE	
0025	0004	K4, 4	/SWITCH REGISTER MASKS	
0026	0400	K0400, 0400		
0027	0200	K0200, 0200		
0030	0100	K0100, 0100		
0031	0000	NOTE, 0	/7'S=ERROR WITH NO SKIP	
0032	0257	PRINT, INF1=1	/0'S=ERROR WITH SKIP	
0033	0201	AERR1, ERR1		
0034	0206	AERR2, ERR2		
0035	0413	APDR, PDR		
0036	1014	ITADNM, TAD NUM		
0037	0600	ATFCLF, TFCLF		

/SR0(0)=HALT AFTER ERROR PRINTOUT
 /SR1(1)=NO PRINTOUTS
 /SR3(1) = HOLD FROM CONSTANT
 /SR4(1) = HOLD TO CONSTANT
 /SR5(1) = HOLD PATTERN CONSTANT
 /SR9(0) = DO ONE ISE ONLY
 /SR11(1) = DO TEST PART 2
 /
 /

0040	4441	/PROGRAM START		
0041	0614	START, JMS I ,+1	/ION	
0042	0015	PATCH AND THREE	/LAS	

0043	7640	SZA CLA	/SKIP IF PART 1	
0044	5426	JMP I K0400	/GO TO PART 2	
0045	1036	TAD ITADNM		
0046	3165	DCA RANUM+I		
		/CHECK FOR FIXED PATTERN		
0047	7604	CHEK1, LAS		
0050	0030	AND K0100		
0051	7440	SZA		
0052	5055	JMP CHEK2		
0053	4164	SELPAT, JMS RANUM	/SELECT THE PATTERN	
0054	3022	DCA PATRN		
0055	7604	CHEK2, LAS	/CHECK FOR FIXED TO	
0056	0027	AND K0200		
0057	7640	SZA CLA		
0060	5065	JMP CHEK3		
0061	4164	SELTO, JMS RANUM	/SELECT THE TO LOCATION	
0062	3021	DCA TOLOC		
0063	1021	TAD TOLOC		
0064	4151	JMS LIMTST		
0065	7604	CHEK3, LAS	/CHECK FOR FIXED FROM	
0066	0026	AND K0400		
0067	7640	SZA CLA		
0070	5075	JMP PLCINT		
0071	4164	SELFRM, JMS RANUM	/SELECT THE FROM LOCATION	
0072	3002	DCA FRMLC		
0073	1002	TAD FRMLC		
0074	4151	JMS LIMTST		
		/PLACE FROM INSTRUCTIONS		
0075	7240	PLCINT, CLA CHA		
0076	1002	TAD FRMLC		
0077	3011	DCA WORK		
0100	1016	TAD ISE1		
0101	3411	DCA I WORK		
0102	1017	TAD JMP1		
0103	3411	DCA I WORK		
0104	1020	TAD JMP2		
0105	3411	DCA I WORK		
0106	1022	/DEPOSIT PATTERN IN TO LOCATION		
0107	3421	TAD PATRN		
		DCA I TOLOC		

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0110 1022      /STORE PREDICTED ISZ RESULT
0111 3023      TAD PATRN
0112 1023      DCA BEFOR
0113 7001      LUP1, TAD BEFOR
0114 3024      IAC
0115 5407      DCA AFTER
                JMP I ASUC

0116 7604      /RETURN FOR NO SKIP CONDITION
0117 7004      BACK, LAS
0120 7710      RAL
0121 5132      SPA CLA
0122 1421      JMP LAS1
0123 7041      TAD I TOLOC
0124 1024      CIA
0125 7640      TAD AFTER
0126 5433      SEA CLA
0127 1421      JMP I AERR1      /ERROR IN ISZ OPERATION
0128 7650      TAD I TOLOC
0129 5433      SNA CLA
0130 7604      JMP I AERR1      /ERROR IN ISZ SKIP DETECTION
0131 5433      LAS1, LAS
0132 7604      AND K4
0133 0025      SNA CLA
0134 7650      JMP CHEK1      /SKIP IF NOT ONE ISZ (SR9)
0135 5047      IAC
0136 7001      TAD BEFOR
0137 1023      JMP LUP1-1

0141 7604      /RETURN FOR SKIP CONDITION
0142 7004      BAKBRN, LAS
0143 7710      RAL
0144 5047      SPA CLA
0145 1421      JMP CHEK1
0146 7640      TAD I TOLOC
0147 5434      SEA CLA
0148 5047      JMP I AERR2      /SKIP IF TO LOCATION OK
                                /ERROR IN ISZ LOCATION
                                /TEST HIGH=LOW LIMITS

0151 0000      LIMTST, 0
0152 7510      SPA
0153 5160      JMP ,+5
0154 1003      TAD LIMLO
0155 7700      SNA CLA
0156 5551      JMP I LIMTST
0157 5165      JMP RANUM+1
0158 1006      TAD LIMHI
0159 7700      SNA CLA
0160 5165      JMP RANUM+1
0161 5551      JMP I LIMTST

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0164 0000      /RANDOM NUMBER GENERATOR
0165 1014      RANUM, 0
0166 7104      TAD NUM
0167 7430      RAL CLL
0168 1015      SEL
0169 3014      TAD THREE
0170 1014      DCA NUM
0171 1014      TAD NUM
0172 5564      JMP I RANUM      /AC=NEW RANDOM NUMBER

0174 1000      K1000, 1000
0175 0000      KP, 0

0200 0200      *200
0201 5040      JMP START
0202 1340      /ERROR ROUTINE 1
0203 3332      ERR1, TAD SKPDAT+6
0204 7040      DCA SKPDAT
0205 3031      CMA
0206 5210      DCA NOTE
0207 3332      JMP KPGO

0208 1331      /ERROR ROUTINE 2
0209 3332      ERR2, TAD SKPDAT+1
0210 1002      DCA SKPDAT
0211 3011      KPGO, TAD FRMLOC
0212 1370      DCA WORK
0213 4342      TAD A3
                JMS SETUP

0214 1021      TAD TOLOC
0215 3011      DCA WORK
0216 1371      TAD A4
0217 4342      JMS SETUP

0220 1022      TAD PATRN
0221 3011      DCA WORK
0222 1372      TAD A5
0223 4342      JMS SETUP
0224 1023      TAD BEFOR
0225 3011      DCA WORK
0226 1373      TAD A6
0227 4342      JMS SETUP

0230 1421      TAD I TOLOC
0231 3011      DCA WORK
0232 1374      TAD A7
0233 4342      JMS SETUP

0234 6002      /TTY PRINT ROUTINE
0235 1032      TTY, 10F
0236 3011      TAD PRINT
0237 1411      DCA WORK
                TAD I WORK

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0240 6046      TLS
0241 6041      TSP
0242 5241      JMP ,=1
0243 1013      TAD M377
0244 7640      SZA CLA
0245 5237      JMP TTY+3
0246 6042      TCF
0247 6001      ION
0250 7604      LAS
0251 7700      SMA CLA
0252 7402      HLT          /HALT AFTER ERROR (SR0)

0253 1031      TAD NOTE
0254 7650      SNA CLA
0255 5047      JMP CHEK1
0256 3031      DCA NOTE
0257 5132      JMP LAS1          /RETURN TO NO SKIP ROUTINE

```

```

0260 0306      INF1, 306      /ERROR PRINT OUT LINE 1
0261 0240      240          /F FROM (INSTRUCTION LOCATION)
0262 0000      INDATA, 0      /SPACE
0263 0000      0          /X LOCATION
0264 0000      0          /X
0265 0000      0          /X
0266 0240      240          /SPACE
0267 0240      240          /SPACE
0270 0324      324          /T TO (OPERAND ADDRESS)
0271 0240      240          /SPACE
0272 0000      ONDATA, 0      /X ADDRESS
0273 0000      0          /X
0274 0000      0          /X
0275 0000      0          /X
0276 0215      215          /CR
0277 0212      212          /LF
0300 0215      215          /CR
0301 0215      215          /CR

0302 0317      /ERROR PRINTOUT LINE 2
0303 0240      317          /O OPERAND (STARTING COUNT)
0304 0000      SYDATA, 240    /SPACE
0305 0000      0          /X PATTERN
0306 0000      0          /X
0307 0000      0          /X
0310 0240      240          /SPACE
0311 0240      240          /SPACE
0312 0306      306          /F FAILING COUNT
0313 0240      240          /SPACE
0314 0000      FLDATA, 0      /X PATTERN BEFORE FAILING ISE
0315 0000      0          /X
0316 0000      0          /X
0317 0000      0          /X
0320 0240      240          /SPACE

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0321 0240      240          /SPACE
0322 0322      322          /R RESULT AFTER FAILURE
0323 0240      240          /SPACE

0324 0000      RSDATA, 0      /X PATTERN AFTER FAILING ISE
0325 0000      0          /X
0326 0000      0          /X
0327 0000      0          /X
0330 0240      240          /SPACE
0331 0240      240          /SPACE
0332 0316      SKPDAT, 316    /N NO
0333 0323      323          /S SKIP
0334 0215      215          /CR
0335 0212      212          /LF
0336 0212      212          /LF
0337 0377      377          /RUBOUT
0340 0316      316          /N
0341 0323      323          /S

0342 0000      SETUP, 0
0343 3012      DCA WORK1
0344 1011      TAD WORK
0345 7006      RTL
0346 7006      RTL
0347 4362      JMS MORSU
0350 7012      RTR
0351 7012      RTR
0352 7012      RTR
0353 4362      JMS MORSU
0354 7012      RTR
0355 7010      RAR
0356 4362      JMS MORSU
0357 4362      JMS MORSU
0360 7200      CLA
0361 5742      JMP I SETUP
0362 0000      MORSU, 0
0363 0010      AND MSK7
0364 1375      TAD TW6
0365 3412      DCA I WORK1
0366 1011      TAD WORK
0367 5762      JMP I MORSU

0370 0261      A3, INDATA=1
0371 0271      A4, ONDATA=1
0372 0303      A5, SYDATA=1
0373 0313      A6, FLDATA=1
0374 0323      A7, RSDATA=1
0375 0260      TW6, 0260

/PAGE 1 CONSTANTS

```

```

0401 7041 CIA
0402 3310 DCA FROM /LOW LIMIT TO FROM
0403 1003 TAD LIMLO
0404 7040 CMA
0405 3311 DCA TO
0406 1346 TAD A0
0407 3313 DCA PATCYC
0410 1314 TAD INST1
0411 3165 DCA RANUM+1

0412 5047 JMP CHEK1 /GO TO PAGE 0 START

/PATH DECISION ROUTINE
PDR, TAD RANUM
CIA
TAD GFROM
SNA CLA /SKIP IF NOT REQUESTING FROM
JMP FRUT /GO TO FROM ADDRESS ROUTINE

0420 1164 TAD RANUM
0421 7041 CIA
0422 1306 TAD GTO
SNA CLA /SKIP IF NOT REQUESTING TO
JMP TORUT /GO TO TO ADDRESS ROUTINE
JMP PRUT /GO TO PATTERN ROUTINE

/SELECT PATTERN AND OTHER THINGS
PRUT, TAD I PATCYC
DCA PATT
TAD PATT
SNA /NO SKIP IF END OF PATTERN TABLE
JMP ,+6 /END PATTERN TABLE LOOK AROUND
CLA IAC
TAD PATCYC
DCA PATCYC
TAD PATT
JMP I RANUM /RETURN, AC=NEW PATTERN
/
TAD AK7776
DCA PATCYC /RESTOR START ADDRESS OF PATT, TABLE
IAC
TAD TO
DCA TO /INCREMENT TO
TAD TO
CIA
TAD FROM
SZA CLA /SKIP IF TO = FROM
JMP ,+4
TAD TO
TAD THREE
DCA TO /SKIP AROUND FROM
TAD TO
SNA
JMP GOUT

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```

0460 1006 TAD LIMHI
0461 7710 SPA CLA /SKIP IF END TEST AREA
0462 5276 JMP GOUT
0463 7201 CLA IAC
0464 1310 TAD FROM
0465 3310 DCA FROM /ADVANCE FROM
0466 1003 TAD LIMLO
0467 7041 CIA
0470 3311 DCA TO /RESET TO ADDRESS
0471 1310 TAD FROM
0472 1006 TAD LIMHI
0473 7710 SPA CLA
0474 5276 JMP GOUT
0475 5200 JMP 400
GOUT, CLA
TAD PATT
JMP I RANUM

/SELECT TO ROUTINE
TORUT, TAD TO
JMP I RANUM

/SELECT FROM ROUTINE
FRUT, TAD FROM
JMP I RANUM

/PAGE 3 CONSTANTS
GFROM, SELFRM+1 /STORED RETURN ADDRESS WHEN
/RANDOM FROM IS REQUESTED
GTO, SELTO+1 /STORED RETURN ADDRESS WHEN
/RANDOM TO IS REQUESTED
GPAT, SELPAT+1 /STORED RETURN ADDRESS WHEN
/RANDOM PATTERN IS REQUESTED
FROM, 0 /CURRENT FROM ADDRESS
TO, 0 /CURRENT TO ADDRESS
PATT, 0 /CURRENT PATTERN
PATCYC, 0 /CURRENT PATTERN ADDRESS
INST1, JMP I APDR
K7776, 7776
7775
7773
7767
7757
7737
7677
7577
7377
6777
5777
3777
0001
0003
0007
0017

```



```

0535 0037
0536 0077
0537 0177
0540 0377
0541 0777
0542 1777
0543 3777
0544 0000
0545 0515
0546 0544

```

```

K3777, 3777
0
AK7776, K7776
A0, K3777+1

```

```

0547 1375
0550 7001
0551 3375
0552 1375
0553 7640
0554 5437
0555 1175
0556 1174
0557 3175
0560 1175
0561 7640
0562 5437
0563 6002
0564 1376
0565 3011
0566 5767
0567 7602
0570 0219
0571 0212
0572 0306
0573 0303
0574 0377
0575 0000
0576 0567

```

```

SUC,
TAD CT
IAC
DCA CT
TAD CT
SEA CLA
JMP I ATFCLF
TAD KP
TAD K1000
DCA KP
TAD KP
SEA CLA
JMP I ATFCLF
ION
TAD INF2
DCA WORK
JMP I ,+1
7602
215
212
306
303
377
0
CT,
INF2, 567

```

```

0600 *600

```

```

/CHECK FOR TO&FROM CONFLICT

```

```

0600 1021
0601 7041
0602 1002
0603 7450
0604 5055
0605 7001
0606 7450
0607 5055
0610 7001
0611 7650
0612 5055

```

```

TFCLF,
TAD TOLOC
CIA
TAD FRMLCC
SNA
JMP CHEK2
IAC
SNA
JMP CHEK2
IAC
SNA CLA
JMP CHEK2

```

```

0613 5402
0614 0000
0615 3000
0616 1232
0617 3001
0620 1233
0621 3002
0622 1234
0623 3003
0624 1235
0625 3040
0626 1236
0627 3041
0630 6001
0631 5614
0632 7402
0633 0000
0634 7197
0635 6001
0636 7604

```

```

JMP I FRMLCC
PATCH, 0
DCA 0
TAD X
DCA 1
TAD X1
DCA 2
TAD X2
DCA 3
TAD X3
DCA START
TAD X4
DCA START+1
ION
JMP I PATCH
X, 7402
X1, 0
X2, 7197
X3, ION
X4, LAS

```

```

7602
7602 1411
7603 6046
7604 6041
7605 5204
7606 1013
7607 7640
7610 5202
7611 5217

```

```

*7602
TAD I WORK
TAS
TSF
JMP ,+1
TAD M377
SEA CLA
JMP ,+6
JMP OVR

```

```

7617 6042
7620 6001
7621 5437

```

```

*7617
OVR,
TCF
ION
JMP I ATFCLF

```

[illegible]

1000
1100

1200
1300

1400
1500

1600
1700

2000
2100

2200
2300

2400
2500

2600
2700

3000
3100

3200
3300

3400
3500

3600
3700

4000
4100
4200
4300
4400
4500
4600
4700

5000
5100
5200
5300
5400
5500
5600
5700

6000
6100
6200
6300
6400
6500
6600
6700

7000
7100
7200
7300
7400
7500

```

7600  00111111  11000001  11000000  00000000  00000000  00000000  00000000  00000000
7700  00000000  00000000  00000000  00000000  00000000  00000000  00000000  00000000

```


A0	0046	M377	0013
A3	0370	MORSU	0342
A4	0371	MSK7	0010
A5	0372	NOTE	0031
A6	0373	NUM	0014
A7	0374	ONDATA	0272
AERR1	0033	OVR	7617
AERR2	0034	PATCH	0614
AFTER	0024	PATCYC	0513
AK7776	0545	PATRN	0022
APDR	0035	PATT	0512
ASUC	0007	PDR	0413
ATFCLF	0037	PLCINT	0075
BACK	0116	PRINT	0032
BAKDRN	0141	PRUT	0406
BEFOR	0023	RANUM	0144
CHEK1	0047	RSDATA	0324
CHEK2	0055	SELFRM	0071
CHEK3	0065	SELPAT	0003
CT	0575	SELTO	0061
ERR1	0201	SETUP	0342
ERR2	0206	SKPDAT	0332
FLDATA	0314	START	0040
FRMLC	0002	SYDATA	0304
FROM	0510	SUC	0547
FRUT	0503	TFCLF	0600
GFROM	0505	THREE	0015
GOUT	0496	TO	0511
GPAT	0507	TOLOC	0021
GTO	0506	TORUT	0501
INDATA	0262	TTY	0234
INF1	0260	TW6	0375
INF2	0576	WORK	0011
INST1	0514	WORK1	0012
ISE1	0016	X	0632
ITADNM	0036	X1	0603
JMP1	0017	X2	0634
JMP2	0020	X3	0635
K0100	0030	X4	0636
K0200	0027		
K0400	0026		
K1000	0174		
K3777	0543		
K4	0023		
K7776	0515		
KP	0175		
KP00	0210		
LAS1	0132		
LIMHI	0006		
LIMLO	0003		
LIMTST	0151		
LUP1	0112		

ERRORS DETECTED: 0
 LINKS GENERATED: 0
 RUN-TIME: 4 SECONDS
 2K CORE USED

